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EXAMINER

SERROU, ABDELALI

ART UNIT	PAPER NUMBER
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2654

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/921,826

Applicant(s)

SCHONEBURG ET AL.

Examiner

Abdelali Serrou

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 03 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 1 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-18 is/are rejected.
- 7) ☒ Claim(s) 3 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 3 and 9 are objected to because of the following informalities:

Claim 3, line 1, the number "1" should be "2".

Claim 9, line 1, the number "6" should be "8".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 2-6, 8-15, and 17 are rejected under 35 U.S.C. 102(a) as being anticipated by Abella et al. (US 6,044,347, filed on August 5, 1997, and issued on March 28, 2000).

3. As per claim 2 and 8, Abella et al teach: a natural language input processing system ("dialogue manager", col. 2, line 32) that discloses a set of trees (interpretation trees, col. 9, line 25) and each tree define the meaning for a respective phrase (frame, col. 9, line 8) such as "Reservation", "Flight Reservation", and "Car Rental" respectively in

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(col. 9, lines 8, 9, and 10); means for receiving natural language input (FIG. 1, item 12); means for comparing the natural language input to each tree in the set of trees to determine a value (a weight, col. 9, line 15) representing the closeness of a match between the natural language input and the phrase associated with a given tree (performing a pattern match between the properties of the expectation tree and the ambiguous interpretation tree, col. 13, lines 38-40); and means for selecting a tree to define the meaning of the natural language input based upon the value (col. 9, lines 27-29).

4. As per claims 3 and 9, Abella et al. teach means for selecting a tree to define the meaning of the natural language input based upon the value, as explained above, furthermore, the means for selecting comprise means for applying a set of rules to each value (weight) (the weight conveys to the dialogue manager 30 the importance of the corresponding property (col. 9, lines 15, 17)).

5. As per claim 4, Abella et al. teach a “dialogue manager” (col. 2, line 32) that “conduct an efficient dialogue with a human user” (col. 2, lines 34, 35) by using basic dialogue rules (col. 3, lines 49-53), which implies discourse rules.

6. As per claim 5 and 6, Abella et al. teach a set of discourse rules (see rejection of claim 4) that relates to dialogue rules (col. 3, lines 49- 50) and work in connection with a set of rules relating to at least one goal control applicable to the processing of the natural language input (presenting the desired query response to the user, col. 3, lines 10-11).

7. As per claims 10 and 13, Abella et al. teach a system for processing a natural language input that comprises means for receiving a natural language phrase (see rejection of claim 2); furthermore, the natural language processing system comprises means for interpreting the natural language phrase based on a first set of rules (such as “grammar” (col. 8, line 57) and “semantics” (col. 8, line 65) rules); and means for generating a response to the natural language phrase in accordance with a second set of rules (in the “language generation element 42”, col. 8, lines 21- 22).

8. As per claims 11 and 14, claims 11 and 14 are rejected for the same reasons as set in the rejection of claim 2 and 8.

9. As per claims 12 and 15, Abella et al. teach a system wherein the means for generating a response to the natural language phrase comprise means for applying goal control rules (such as the rules of repeating the process of asking the user questions in order to clarify the ambiguity of the user’s request, col. 8, lines 14-17).

10. As per claim 17, Abella et al. teach a system (dialogue manager) for interactive dialogue between a user and a computer system (col. 2, lines 32-35) comprising an input interface receiving an input phrase from a user (The system 10 receives a speech signal in the form of utterances from a user via a microphone 12, col. 4, lines 43 and 44); a preprocessing module converting the received input phrase into at least one pattern (A speech recognition unit 14 converts the speech signal to a computer-recognizable format,

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col. 4, lines 45 and 46); a pattern knowledge database for storing a plurality of patterns (system memory 16, FIG. 1); a pattern recognition module which is, inherently, embedded in the “speech recognition unit 14” (col. 4, line 45) in operable communication with the preprocessing module and the pattern knowledge database (see FIG. 1), the pattern recognition module identifying elements in the converted input phrase and locating at least one matching pattern in the pattern knowledge database (the dialogue manager performing a pattern match between the properties of the expectation tree and the ambiguous interpretation tree, col. 13, lines 38-40); a first control module creating, in response to each matching pattern in the input phrase, a plurality of potential outputs based upon the matching pattern and at least one rule as in the case of disambiguation wherein the “dialogue manager” responds with an “interpretation tree” of “five branches” (col. 10, line 22); a second control module defining at least one condition for selection of a potential output from the plurality of potential outputs as in the case wherein “the dialogue manager must discriminate between the branches B1 and B2, col. 10, lines 48 and 49); a third control module in operable communication with the first and second control modules and the pattern recognition module, the third control module interpreting the input phrase, selecting an output, and generating a response in accordance with information provided by the pattern recognition module and the first and second control modules as in the case wherein “the dialogue manager does not need to ask any further questions because this response narrows the search for the correct branch to one, namely branch B4” (col. 10, lines 52-54); and an output interface providing the response to the user such as a speaker (FIG. 1, element 22).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 7, 16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abella et al. in view of Kleindienst et al. (US 6, 598,020, filed on September 10, 1999)

13. As per claim 7, and 16, Abella et al. teach a pattern recognition module, identifying element in an input phrase and locating matching patterns in knowledge bases; a discourse control module based upon stored goals information (see rejection of claims 5 and 6); and an output interface providing the response to the user (see argument used for claim 17 rejection); a meta-control module for coordinating work managing the context of a dialog by using information from the discourse control (such as the module embedded in the input filter which serves as an interface between the dialogue manager and the application", col. 2, lines 62 and 63).

However, Abella et al. do not teach a system wherein the set of discourse rules works in connection with a set of rules relating to at least one emotion control applicable to the processing of the natural language input.

Kleindienst et al., however, teach a method for "providing emotions for a conversational system" (col. 1, line 35). Hence, Kleindienst et al.'s system discloses a set of discourse rules that works in connection with a set of rules relating to at least one

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emotion control applicable to the processing of the natural language input, and discourse control module for regulating a conversation flow in a human-like way and creating a set of suitable outputs corresponding to a particular input based upon the matching patterns and upon emotional information (col. 1, lines 38-41).

Abella et al. and Kleindienst et al. are analogous art because they are from the art of dialogue management.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to have added the emotion control module of Kleindienst et al.'s system to the system of Abella et al. in order to obtain a system that is capable of providing a more human-like interaction with the user.

14. As per claim 18, in accordance the rejection arguments used for claims 2 and 17, Abella et al. teach a computer implemented method for conducting a natural language dialog with a user, comprising the steps of receiving a natural language phrase from a user; identifying at least one pattern in the phrase; comparing the identified pattern to a plurality of stored patterns, each stored pattern associated with a rule regulating the interpretation of the phrase; computing a matching score for each comparison between the at least one pattern in the phrase and each stored pattern, the matching score based at least in part on the subject of the phrase; For, Abella et al. teach an application system that executes the user's request to generate a response (see col. 2, lines 62-67), which implies that the system determines the subject of the input phrase; selects a subset of the stored patterns having the best matching scores (branches B1 through B5, col. 10, lines 22 and 23); applies at least one dialog control

rule to the subset to filter the best matching stored pattern from the subset (branch 4, col. 10, line 54). Thus, that the system used does interprets the best matching stored pattern in accordance with its respective rule and generates a plurality of possible responses (as mentioned above) to the user based on the interpretation of the best matching stored pattern.

However, Abella et al. do not teach selecting a response to the user from the plurality of possible responses based on at least one of a goal control rule and an emotion control rule.

Kleindienst et al., however, teach a method of selecting a response to the user from the plurality of possible responses based on at least one of a goal control rule and an emotion control rule such as in the case of “Anger”, “Impatience”, and “Jealousy” described in detail in col. 9, lines 43-50.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to have added the emotion control rule module of Kleindienst et al.’s system to the dialogue management system of Abella et al. in order to obtain a system that customizes emotions and personality responsive to human interactions.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Au (U.S 2003/0191627) teaches a method and a system to enforce a uniform branching of node-to-node inheritance links within semantic networks. Lin et al. (U.S 6, 675, 159) teach a system that extracts the concepts behind user queries to

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return only the documents that match those concepts. Wang (U.S 6, 785, 651) teaches a method and system for defining and handling user/computer interactions.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdelali Serrou whose telephone number is 571-272-7638. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Smits can be reached on 571-272-7628. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abdelali Serrou
04/07/05


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